ABSTRACT OF THE DISCLOSURE

A semiconductor memory device is capable of simultaneously reading data and refreshing data and checking

5   whether a data restoring function is operating normally. A data inputting circuit receives data inputted from an external circuit. A parity generating circuit generates parity data from the data input from the data inputting circuit. A memory stores the data input from the data in-

10 putting circuit and the parity data generated by the parity generating circuit. A refreshing circuit refreshes the memory. A reading circuit reads the data from the memory. A restoring circuit restores data to be refreshed by the refreshing circuit from other data read normally

15 and corresponding parity data, while the reading circuit is reading data. A data outputting circuit outputs the data read by the reading circuit and the data restored by the restoring circuit. A parity outputting circuit directly reads and outputs the parity data stored in the

20 memory.